

CLAIMS

1. An isolated polynucleotide comprising a chimeric GBV-B polynucleotide encoding a virus.

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2. The polynucleotide of claim 1, comprising a chimeric GBV-B genome, wherein at least part, but not all of a 5' NTR sequence is from a HCV 5' NTR.

3. The polynucleotide of claim 2, wherein at least one, but not all of domain I, II, III, or IV 10 of the 5' NTR is from a HCV 5' NTR.

4. The polynucleotide of claim 2, wherein domain I of the 5' NTR is from a HCV 5'NTR.

5. The polynucleotide of claim 2, wherein domain II of the 5' NTR is from a HCV 5'NTR.

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6. The polynucleotide of claim 2, wherein domain III of the 5' NTR is from a HCV 5'NTR.

7. The polynucleotide of claim 6, wherein the 5' NTR domain Ib of GBV-B is deleted.

20 8. The polynucleotide of claim 2, wherein domain IV of the 5' NTR is from a HCV 5'NTR.

9. The polynucleotide of claim 2, wherein domain I and domain II of the 5' NTR is from a HCV 5'NTR.

25 10. The polynucleotide of claim 2, wherein domain I and domain III of the 5' NTR is from a HCV 5'NTR.

11. The polynucleotide of claim 2, wherein domain I and domain IV of the 5' NTR is from a HCV 5'NTR.

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12. The polynucleotide of claim 2, wherein domain II and domain III of the 5' NTR is from a HCV 5'NTR.

13. The polynucleotide of claim 2, wherein domain II and domain IV of the 5' NTR is from a HCV 5'NTR.

14. The polynucleotide of claim 2, wherein domain III and domain IV of the 5' NTR is from a HCV 5'NTR.

5 15. The polynucleotide of claim 2, wherein domain II, domain III and domain IV of the 5' NTR is from a HCV 5'NTR.

10 16. The polynucleotide of claim 15, wherein the 5' NTR domain Ib of GBV-B is deleted.

17. The polynucleotide of claim 2, wherein said polynucleotide is DNA.

18. The polynucleotide of claim 2, wherein said polynucleotide is RNA.

15 19. The polynucleotide of claim 1, further comprising at least part of a structural protein coding region of HCV.

20 20. The polynucleotide of claim 1, further comprising at least part of a non-structural protein coding region of HCV.

21. A viral expression construct comprising a chimeric GBV-B polynucleotide, wherein at least a part of the 5' NTR sequence is from a HCV 5' NTR.

25 22. The viral expression construct of claim 21, wherein domain III of the 5' NTR is from a HCV 5' NTR.

23. The viral expression construct of claim 21, further comprising a deletion of the GBV-B 5' NTR domain Ib region.

30 24. The viral expression construct of claim 21, wherein said construct is a plasmid.

25. The viral expression construct of claim 21, wherein said construct is a virus.

26. The viral expression construct of claim 21, further defined as a construct for the expression of a chimeric GBV-B/HCV virus.

27. A method for identifying a compound active against a viral infection comprising: providing a virus expressed from a viral construct comprising a chimeric GBV-B/HCV virus; contacting the virus with a candidate substance; and comparing infectivity of the virus in the presence of the candidate substance with the infectivity of the virus in the absence of the candidate substance.

28. The method of claim 27, wherein the chimeric virus comprises at least part of a 5' NTR sequence from a HCV 5' NTR.

29. The method of claim 28, wherein the chimeric virus comprises domain III of the 5' NTR is from a HCV 5'NTR.

30. The method of claim 28, wherein the chimeric virus comprises a deletion of domain Ib of GBV-B.

31. A compound active against a viral infection identified according to a method comprising: providing a virus expressed from a viral construct comprising a GBV-B/HCV chimeric virus; contacting the virus with a candidate substance; and comparing the infectivity of the virus in the presence of said candidate substance with the infectivity of the virus in the absence of said candidate substance.

32. The compound of claim 31, wherein the compound is identified by providing a viral construct comprising at least part of a 5' NTR sequence from a HCV 5' NTR.

33. The compound of claim 32, wherein the compound is identified by providing a viral construct comprising domain III of the 5' NTR is from a HCV 5'NTR.

34. The compound of claim 32, wherein the compound is identified by providing a viral construct lacks domain Ib of GBV-B.

35. A hepatotropic virus comprising a chimeric GBV-B polynucleotide, wherein at least a 5 part of the 5' NTR sequence is from a HCV 5' NTR.

36. The hepatotropic virus of claim 35, wherein domain III of the 5' NTR is from a HCV 5' NTR.

10 37. The hepatotropic virus of claim 35, further comprising a deletion of the GBV-B 5' NTR domain Ib region.

38. The hepatotropic virus of claim 36, wherein the virus propagates *in vivo*.

15 39. The hepatotropic virus of claim 35, further defined as a construct for the expression of a chimeric GBV-B/HCV virus.

40. A method of producing a virus comprising:  
introducing into a host cell a viral expression construct comprising a chimeric GBV-B 20 polynucleotide encoding at least part of a 5' NTR sequence from a HCV 5' NTR sequence; and  
culturing the host cell under conditions permitting production of a virus from the construct.

25 41. The method of claim 40, wherein said polynucleotide comprises at least a 5' NTR domain I from a HCV 5' NTR.

42. The method of claim 40, wherein said polynucleotide comprises at least a 5' NTR domain II from a HCV 5' NTR.

30 43. The method of claim 40, wherein said polynucleotide comprises at least a 5' NTR domain III from a HCV 5' NTR.

44. The method of claim 43, wherein said polynucleotide comprises a deletion of 5' NTR domain Ib of GBV-B.

45. The method of claim 40, wherein said polynucleotide comprises at least a 5' NTR domain 5 I and domain II from a HCV 5' NTR.

46. The method of claim 40, wherein said polynucleotide comprises at least a 5' NTR domain I and domain IV from a HCV 5' NTR.

10 47. The method of claim 40, wherein said polynucleotide comprises at least a 5' NTR domain I, domain II and domain III from a HCV 5' NTR.

48. The method of claim 40, wherein said polynucleotide comprises a 5' NTR from a HCV 5' NTR.

15 49. The method of claim 40, wherein said polynucleotide comprises at least a 5' NTR domain II and domain III from a HCV 5' NTR.

50. The method of claim 40, wherein said polynucleotide comprises at least a 5' NTR domain 20 III and domain IV from a HCV 5' NTR.

51. The method of claim 40, wherein said host cell is a eukaryotic cell.

52. The method of claim 51, wherein said host cell is in an animal.

25 53. The method of claim 40, wherein said polynucleotide comprises synthetic RNA.

54. The method of claim 40, further comprising the step of isolating virus from said host cell.

30 55. The method of claim 54, wherein the isolated virus is purified to homogeneity.

56. A method for identifying a compound active against a viral infection comprising:

providing a chimeric virus expressed from a viral construct comprising at least part of a 5' NTR from a HCV 5' NTR;  
contacting the virus with a candidate substance; and  
comparing the infectivity of the virus in the presence of the candidate substance with the  
5 infectivity of the virus in the absence of the candidate substance.

57. The method of claim 56, wherein the viral construct comprises at least a 5' NTR domain III from a HCV 5' NTR.

10 58. The method of claim 56, wherein the viral construct lacks a 5' NTR domain Ib of GBV-B.